Micro-Dot™

Manual Syringe Dispenser
User Guide

DYMAX®

About Dymax

UV/Visible light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial adhesives, light-curable adhesives, epoxy resins, cyanoacrylates, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic fluid dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives.

Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for 100% in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application and use is strictly limited to that contained in the Dymax standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to insure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation. Data sheets are available for valve controllers or pressure pots upon request.

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Introduction

Introduction to the User Guide

This guide describes how to assemble, use, and maintain the Dymax Micro-Dot™ hand-held syringe dispenser safely and efficiently.

Intended Audience

Dymax prepared this user guide for experienced process engineers, maintenance technicians, and manufacturing personnel. If you are new to fluid dispensing equipment and do not understand the instructions, contact Dymax Application Engineering to answer your questions before using the equipment.

Where to Get Help

Additional resources are available to ensure a trouble-free experience with our products:

- Detailed product information on www.dymax.com
- Customer Support and Application Engineering teams are available in the United States, Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Standard Time. You can also email Dymax at info@dymax.com. Please see the back cover for worldwide contact information.
- Dymax adhesive Product Data Sheets (PDS) on our website
- Material Safety Data Sheets (MSDS) provided with shipments of Dymax adhesives

Safety

General Safety Considerations

All users of Dymax fluid dispensing equipment should read and understand this user guide before assembling and using the equipment.

To learn about the safe handling and use of dispensing fluids, obtain and read the MSDS for each fluid before using the fluid. Dymax includes an MSDS with each adhesive sold. MSDS for Dymax products can also be requested through the Dymax website.

Personal Protective Equipment

Operators are recommended to wear any personal protective equipment specified by their company's safety policy for the materials used during dispensing. Personal protective equipment should be in place and used at all times when handling any potentially hazardous materials.

Product Overview

Description of the *Micro-Dot* Syringe Dispenser

The *Micro-Dot* is a portable syringe dispenser. It offers positive-displacement accuracy for dispense volumes as small as 0.0003 mL. With the proper dispense tip selection, the *Micro-Dot* is suitable for dispensing a wide range of low-to-high viscosity fluids including pastes, lubricants, adhesives, sealants, and more.

The dispenser can be configured to dispense a set volume repeatedly with accuracy. The *Micro-Dot* utilizes a pre-packaged disposable syringe as its fluid reservoir, preventing any contact between the fluids and the dispenser eliminating fluid contamination during dispense.

Figure 1. Syringe Parts

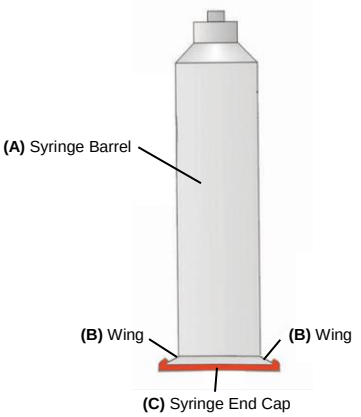
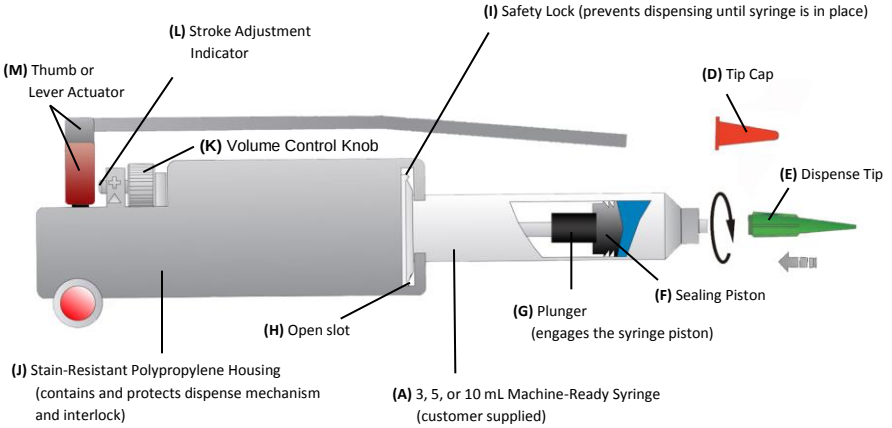


Figure 2. *Micro-Dot* Component Diagram


(I) Safety Lock (prevents dispensing until syringe is in place)
(L) Stroke Adjustment Indicator
(M) Thumb or Lever Actuator
(D) Tip Cap
(K) Volume Control Knob
(E) Dispense Tip
(F) Sealing Piston
(G) Plunger (engages the syringe piston)
(H) Open slot
(J) Stain-Resistant Polypropylene Housing (contains and protects dispense mechanism and interlock)
(A) 3, 5, or 10 mL Machine-Ready Syringe (customer supplied)

Assembly and Setup

Unpacking and Inspecting Your Shipment

When your *Micro-Dot* syringe dispenser arrives, inspect the box for damage and notify the shipper of box damage immediately.

Open the box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that new parts can be shipped to you immediately.

Check that the parts included in your order match those listed below. If parts are missing, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

Parts Included in the *Micro-Dot* Syringe Dispenser

- *Micro-Dot* manual syringe dispense controller
- Sample dispensing kit
- Printed user guide

Figure 3. *Micro-Dot* (Thumb) PN T20000

Figure 4. *Micro-Dot* (Lever) PN T20010

Set-Up

Syringe Preparation

The Syringe End Cap (C) must be removed before connecting the Syringe (A) to the *Micro-Dot* dispenser. Remove the Syringe End Cap (C) by prying it upwards from under the Syringe Wings (B).

Inserting The Syringe Into The *Micro-Dot*

NOTE: The Micro-Dot has a built-in Safety Lock (I) and will not operate without a Syringe (A) in its proper position.

1. The *Micro-Dot* Plunger (G) must be extended before the Syringe (A) is connected to the *Micro-Dot*. To extend the Plunger (G):
   - Hold the *Micro-Dot* body in your hand with the Plunger (G) pointed down.
   - Do not depress the Thumb or Lever Actuator (M) (doing so will lock the Plunger (G) and override the Safety Lock (I)).
   - If the Plunger (G) does not drop freely, grip the Plunger (G) and pull it from the *Micro-Dot* Housing (J).
2. Insert the Plunger (G) into the Syringe Barrel (A).
3. Rotate the Syringe (A) to align the Wings (B) with the Open Slot (H) at the end of the *Micro-Dot* body.

   CAUTION: *If Syringe (A) is over-filled, the Syringe cannot be inserted into the Micro-Dot with the Syringe Tip Cap (D) in place.*
4. Slide the Syringe (A) back until the Wings (B) contact the *Micro-Dot* Housing (J).
5. Firmly rotate the Syringe (A) counterclockwise until it stops.

Preparing the Syringe for Dispensing

1. Remove the Syringe Tip Cap (D) by turning it counterclockwise.

2. Attach the appropriate Dispense Tip (E) by inserting it onto the end of the Syringe (A) and turning clockwise until it stops. When selecting the correct Dispense Tip to use:

   - For best performance with the *Micro-Dot*, Taper Dispense Tips should be used with most fluids.

     CAUTION: *Taper Dispense Tips reduce the back pressure generated during dispensing that can lead to loss of repeatability or dripping following dispense.*

   - Use smaller diameter Dispense Tips with low viscosities and larger Dispense Tips for higher viscosities and gel products.
   - Always use the largest diameter acceptable for your application.

Operation

NOTE: Disregard Step 1 if the Stroke Adjustment Indicator (L) is retracted at least half way from the bottom of the Thumb or Lever Actuator (M) to where it enters the Housing (J).

Step 1. Rotate the Volume Control Knob (K) until the top of the Stroke Adjustment Screw (M) is approximately half way between the bottom of the Actuating Thumb Button or Lever (M) and the Housing (J).

Step 2. Prime the *Micro-Dot* by depressing the Thumb or Lever Actuator (M) a few strokes until consistent drops of material are being dispensed. Touch the drops off on a disposable surface after each dispense.

The size of the adhesive dot can be adjusted by turning the Volume Adjustment Knob (K). Rotate the Volume Adjustment Knob towards the “+” symbol to increase dot size or in the opposite direction to decrease dot size.

Step 3. Between shots, the *Micro-Dot* should be stored upright to ensure that fluid does not leak around the piston. The single-position, inclined syringe stand from Dymax is recommended as it will also protect the dispense tip between uses.

Equipment Maintenance

Tip Replacement

To avoid clogging of dispensing tips, avoid prolonged periods of non-use. Should clogging occur, replace dispensing tips as needed.

Storage

To avoid accidental damage to the unit when storing without a Syringe (A), push the Plunger (G) into the Housing (J).

Troubleshooting

If you are experiencing a problem with your *Micro-Dot* Dispenser, please look through the following troubleshooting section. If your unit is still not working properly after reviewing the troubleshooting recommendations, please contact Dymax Application Engineering for assistance.

Table 2. Troubleshooting Chart for *Micro-Dot* Dispenser

Problem	Possible Cause	Corrective Action
Inconsistent Shots	Clogged or damaged tip	Replace tip
	Back pressure from using wrong tip for fluid type	Use appropriate tip for material. For assistance, call Dymax Application Engineering
	Leaking syringe piston	Increase tip size or replace syringe
	Presence of air bubbles in the syringe	Replace syringe
	Damaged *Micro-Dot*	Contact Dymax

Specifications

Specifications

Property	Specification
Part Numbers	T20000 Thumb Actuated
	T20010 Lever Actuated
Dispenser Type	Manual, positive-displacement syringe dispenser
Dimensions (W x H x D)	4.5" x 0.87" x 2.13" (11.4 cm x 2.2 cm x 5.4 cm)
Weight	2.8 oz (81.3 g)
Minimum Shot Size	0.0003 mL (400 cP material with 25 gauge taper tip)
Maximum Shot Size	0.170 mL (400 cP material with 14 gauge taper tip)

Warranty

From date of purchase, Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components (excluding consumables) with proof of purchase and purchase date. Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation, will void any effective warranties and may result in damage to the equipment.

IMPORTANT NOTE: *DYMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.*

Dymax Corporation
860.482.1010
info@dymax.com
www.dymax.com

Dymax Europe GmbH
+49 (0) 611.962.7900
info_de@dymax.com
www.dymax.de

Dymax UV Adhesives & Equipment (Shenzhen) Co Ltd
+86.755.83485759
dymaxasia@dymax.com
www.dymax.com.cn

Dymax UV Adhesives & Equipment (Shanghai) Co Ltd
+86.21.37285759
dymaxasia@dymax.com
www.dymax.com.cn

Dymax Asia (H.K.) Limited
+852.2460.7038
dymaxasia@dymax.com
www.dymax.com.cn

Dymax Korea LLC
+82.2.784.3434
info_kr@dymax.com
www.dymax.com/kr

Dymax Asia Pacific Pte. Ltd.
+65.6752.2887
info_ap@dymax.com
www.dymax-ap.com

Dymax Oligomers & Coatings
860.626.7006
info_oc@dymax.com
www.dymax-oc.com

Dymax Engineering Adhesives Ireland Ltd.
+353.1.231 4696
info_ie@dymax.com
www.dymax.ie

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